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THESIS

A PARTIAL VALIDATION OF AN ATTITUDE AND BEHAVIOR SCALE

Submitted by

Robert Stuart Macdowall

(B. S. in Ed., Westfield State Teachers' College, 1940)

In partial fulfillment of requirements for
the degree of Master of Education

1947

First Reader: Dr. William C. Kvaraceus, Asst. Prof. of Education

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CHAPTER I

INTRODUCTION: STATEMENT OF PROBLEM

The purposes of this study are: (1) to determine the validity of an Attitude and Behavior Scale designed to predict proneness toward delinquency; (2) to determine the relationship between the Scale scores and intelligence test scores.

SOURCE

The rise of juvenile delinquency during the war made juvenile delinquency a major topic of discussion throughout the country. Current periodicals and newspapers seldom fail to mention some aspect of juvenile delinquency.

Glueck¹ found that in February, 1942, at Shirly School in Massachusetts, there were two and one-third as many boys committed as in the same month in 1941. One and one-half times as many boys were committed to the Lyman School during this same period and a little over twice as many girls were sent to the Lancaster Schools.

JUSTIFICATION

Formerly the main emphasis was placed on the treatment of juvenile delinquency. The main objective now seems to be the prevention of

¹Glueck, E., "Coping with War Time Delinquency," The Journal of Educational Sociology, 16-2:86-98, October

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LITERATURE

Formerly the main emphasis was placed on the treatment of juvenile
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¹Glueck, E., "Coming With War Time Delinquency," The Journal of
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delinquency with the schools given the major role in attacking the problem. There seems to be a strong belief that attitudes play a large part in determining conduct and behavior.

According to Healy and Bronner² "The school has become a vastly powerful factor in the life of childhood and youth. Next to the home it appears as the most widely operative influence in the life of our young people. Secondary to the influences of family relationships and parental upbringing it is the most constructive force in the formation of life's attitudes and interests." Among our great criminal population a very large percentage definitely began their careers with delinquency during the years they were attending school. The school had these young people largely in charge when they were developing antisocial trends. This fact on the very face of it offers a great challenge."

Keener³ says "Treatment is necessary, but prevention is both more economical and more effective. The foundations of delinquency are often laid early in life through the gradual development of attitudes opposed to accepted social practice. Attitudes, good, or bad, are acquired through experiences at home, on the street, in school or wherever the child may be."

² Healy, W. and A. Bronner, "How Does the School Produce or Prevent Delinquency," The Journal of Educational Research, 6:450, April, 1933.

³ Keener, E., "The Classroom Teacher and Juvenile Delinquency," The Elementary School Journal, 40:55, September, 1939.

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According to Healy and Brodwin² "The school has become a vastly powerful factor in the life of childhood and youth. Next to the home it appears as the most widely operative influence in the life of our young people. Secondary to the influences of family relationships and parental upbringing it is the most constructive force in the formation of life's attitudes and interests. Among our great criminal population a very large percentage definitely began their careers with delinquency during the years they were attending school. The school had these young people largely in charge when they were developing emotional trends. This fact on the very face of it offers a great challenge."

Kennedy³ says "Treatment is necessary, but prevention is both more economical and more effective. The formation of delinquency is often laid early in life through the gradual development of attitudes opposed to accepted social practices. Attitudes, good, or bad, are acquired through experience at home, on the street, in school or wherever the child may be."

² Healy, W. and A. Brodwin, "How Does the School Precede or Prevent Delinquency?" The Journal of Educational Research, 6:450, April, 1922.

³ Kennedy, A., "The Classroom Teacher and Juvenile Delinquency," The Elementary School Journal, 40:55, September, 1930.

Williams states⁴ "For some time the feeling has been growing that we should utilize to an ever-increasing extent the facilities which the public schools offer for discovering and treating predelinquents. This has resulted from convincing evidence that most of our efforts towards reformation of delinquents and criminals have proved futile. We are continually reminded that our hope of solving the crime problem must lie in preventing the development of social behavior patterns and criminal attitudes. Long experience in dealing with juvenile offenders has convinced the writer of the futility of most of our efforts after the child has been allowed to become such a serious problem as to need the attention of legal authorities. Since all children attend school at least in the early grades, school would seem to be the logical place to discover the pre-delinquent while his delinquent tendencies are still in the incipient stages of development."

Spence⁵ believes "In any program for preventing delinquency the school will necessarily have a major role to play. The schools have practically all the children during the elementary school period and they also have a trained staff. It is the largest potential resource in the community for locating vulnerables. The schools' greatest contribution can be in the detection of the vulnerables."

⁴ Williams, H., "A Survey of Predelinquent School Children of Ten Midwestern Cities," The Journal of Educational Sociology, 7:365, February, 1934.

⁵ Spence, R., "New York State's Program for Preventing Delinquency," The Journal of Educational Sociology, 18:439, March, 1945.

Symonds⁶ states "It is the thesis of this book that any study of the individual should begin while the child is in school. In school, there is no pressure of economic competition. Schools are (or should be) dominated by the educational point of view, which means studying a child in order to advise him most wisely, or confronting him with activities that will best meet the needs of his development. What the school learns with regard to each individual can then also serve the needs of society outside the school."

Kvaraceus⁷ says "More and more individuals have reached the conclusion that the whole problem of juvenile delinquency revolves around educational processes. . . ." Again he states "The school occupies a most strategic position in the community, for the prevention and control of delinquent behavior. This position is one of leadership."

The Final Report of the White House Conference on Children in a Democracy⁸ states, "A change of emphasis is called for as well as a change toward the less dramatic, less tangible, less measurable, but in the end, more practical task of prevention, and failing prevention, early recognition, diagnosis, and treatment of problems of personality and behavior. . . ."

⁶ Symonds, P., Psychological Diagnosis in Social Adjustment (New York: American Book Company, 1934), p. vi.

⁷ Kvaraceus, W., Juvenile Delinquency and the School (Yonkers-on-Hudson, New York: World Book Company, 1935), page 4.

⁸ Final Report of the White House Conference on Children in a Democracy, Social Services for Children (Washington, D.C.: Superintendent of Documents), p. 270.

"If the school as the principal educational instrument dealing directly with the child has all the potentialities for character building that educators attribute to it then flexible school programs, teachers with training that has made them sensitive to symptoms of maladjustments, and the availability of suitable guidance personnel in the schools are important preventives of juvenile delinquency." Again, "The efforts of coming decades need to be geared to the more widespread prevention of delinquency that can be achieved through facilities for early diagnosis, through helping families, guiding individuals, improving schools and enriching community life in general."

Prince⁹ found in a study of the methods of detection of delinquency in thirteen large cities "a definite trend toward mapping out a program aimed at early detection of maladjustment." Group and individual intelligence and achievement tests were part of the programs.

Ludden¹⁰ states "We have built up an army of professional social workers, a system of children's courts, and a staff of volunteer workers to whom we entrust the problems of children who go astray. All these professional workers, however, deal with a child only after he is already in trouble. By that time his habits are formed, and the task of rehabilitation often is hopeless."

⁹ Prince, H., "Maladjustment and Delinquency: A Study of the Methods of Detection Used in Thirteen Large Cities," (Unpublished thesis, Boston University, Boston, 1947), pages 39-61.

¹⁰ Ludden, W., "Anticipating Cases of Juvenile Delinquency," School and Society, 59:1520, February, 1944.

"If the school as the principal educational instrument dealing directly with the child has all the potentialities for character building that educators attribute to it then flexible school programs, teachers with training that has made them sensitive to a variety of adjustments, and the availability of suitable guidance personnel in the schools are important prerequisites of juvenile delinquency." Again, "The efforts of coming decades need to be geared to the more widespread recognition of delinquency that can be achieved through facilities for early diagnosis, through helping families, guiding individuals, improving schools and enriching community life in general."

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Indeed, even "We have built up an army of professional social workers, a system of children's courts, and a staff of volunteer workers to whom we entrust the problem of children who go astray. All these professional workers, however, deal with a child only after he is already in trouble. By that time his habits are formed, and the task of rehabilitation often is hopeless."

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Id. Ibid., W., "Anticipating Cases of Juvenile Delinquency," Journal of the American Academy of Child and Adolescent Psychiatry, 1948.

It is possible to measure attitudes. The Department of Superintendence Tenth Yearbook¹¹ says "It is safe to say that there is no definable aspect of character or personality which could not be measured by expert persons, given reasonable time and funds, with reliability equal to or superior to better classroom tests in particular subject-matter fields. No one conducting any research in which character outcomes are important can excuse failure to measure them by the assumption that such measurement is impossible."

Jones and Olson¹² state "Attitudes can no longer be considered to be unmeasurable. The work of Thurstone, Watson, Chove, Droba, Hart, Jones and others have indicated that it is feasible to measure attitudes reliably in cases where the subjects are sufficiently cooperative to answer thoughtfully various questions which are put to them."

Testing would be important in a preventive program. Reckless¹³ states "Besides a better gearing of programs to reach delinquent children and to set up counter-patterning processes what preventive work seems to need is guidance from delinquency-prediction studies. Sociologists have made considerable progress in developing methods to predict success or failure on parole and in marriage. These methods could be applied to

¹¹ "Character Education," Department of Superintendence Tenth Yearbook (National Education Association, 1932), ;. 348.

¹² Olson, D., and W. Jones, "An Objective Measure of Emotionally Toned Attitudes," The Pedagogical Seminary and Journal of Genetic Psychology, 174, June, 1931.

¹³ Reckless, W., "Delinquency and Behavior Patterning," Journal of Educational Sociology, 10:504, April, 1937.

predicting the risk of certain levels and classes of children for becoming delinquent and continuing in delinquencies until they have graduated into crime as a profession."

Symonds¹⁴ states "Many psychologists believe that the seeds of delinquency are sown far back in early childhood and that incipient delinquent trends can be discovered in early adolescence by inquiries which are planned for this purpose."

Jones¹⁵ says "The present philosophy holds that the behavior of juvenile offenders can be scientifically studied, and upon the basis of sociological, psychiatric, psychological and medical data, such behavior may be understood, explained, and controlled.

Williams¹⁶ says "The child who shows symptoms of becoming delinquent must be discovered at the earliest possible moment. Inasmuch as the sociological, psychological and medical concomitants of delinquency and crime are now well known it would seem possible to use some method of discovering predelinquent children before their problems become too acute.

¹⁴ Symonds, P., op. cit., p. 12.

¹⁵ Jones, W., "An Educational Problem in Juvenile Delinquency," The Journal of Educational Sociology, 14:439, March, 1941.

¹⁶ Williams, H., op. cit., p. 369.

DEFINITIONS

Droba¹⁷ says "An attitude is a mental disposition of the human individual to act for or against a definite object. This disposition is composed predominantly of feeling elements. When we express our attitude toward a particular object, we are not reasoning about it, we are not aware of all the factors that go into the type of activity we are performing."

Thurstone¹⁸ defines an attitude as "The sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic."

Delinquent boys or girls in this study will refer to boys or girls actually in a state institution.

Public school children will refer to an unselected sample of children in public schools.

High-morale children will refer to children selected on the basis of membership in Girl Scouts, Boy Scouts, student councils, and on the basis of teacher opinion as to the personality adjustment of the child.

¹⁷ Droba, D. D., "The Nature of Attitude," The Journal of Social Psychology, 4:451, 1933.

¹⁸ Thurstone, L. L., and E. J. Chave, The Measurement of Attitude (Chicago: University of Chicago Press, 1929), page 6.

PRESENT STATUS OF TESTING IN THE FIELD OF DELINQUENCY

Maller¹⁹ says "In the fields of delinquency, probation, and crime prevention, personality tests have been applied but the results are inconclusive. Claims have been made for some tests of the ability to predict delinquent tendencies before they are expressed in overt behavior but these claims await substantiation."

¹⁹ Maller, J. B., "Personality Tests," Personality and the Behavior Disorders, edited by J. Hunt, (New York: Ronald Press Company, 1944) Volume I, chapter 5.

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19 Miller, J. B., "Personality Tests," *Personality and the Be-*
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CHAPTER II

REVIEW OF PREVIOUS RESEARCH

Modern efforts to distinguish objectively between delinquents and non-delinquents began in 1912 with the work of Guy C. Fernald.¹ He asked reformatory inmates to stand on tiptoe until overcome by fatigue. This test used an apparatus consisting of a platform on which the subject rested his heels and a dial at the height of his eyes. The dial informed the subject of the height of his heels from the floor. When his heels touched the floor a bell rang, ending the test. Fernald found that a normal group would stand much longer than a reformatory group.

Since then many tests and other devices have been constructed to measure delinquency. These tests have had several purposes: (1) to find the potential delinquent before he gets into trouble, (2) to measure the results of treatment, (3) to find materials for use in the treatment of delinquency.

Moore² states: "The connection between test words and conduct cannot be known to exist for any test until demonstrated." He gives eight methods which have been used for establishing proof or validity: (1) theoretical validity, (2) correlations with other tests, (3) correlations with ratings, (4) comparison with findings of case studies, (5)

¹ Fernald, G. C., "The Defective Delinquent Class, Differentiating Tests," The American Journal of Insanity, 67:523-594, April, 1913

² Moore, K. M., "Tests for Delinquency," The Journal of Educational Psychology, 10:506-511, April, 1937.

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¹ Fernald, G. D., "The Predictive Delinquency Class, Intermittent-tine Tests," The American Journal of Insanity, 67:323-324, April, 1911.

² Moore, K. M., "Tests for Delinquency," The Journal of Educational Psychology, 10:508-511, April, 1917.

comparisons with selections by the nominative method, (6) test score differences between two groups known to differ in conduct, (7) test score differences between more than two groups, (8) differences in test scores among individuals.

Discussing the sixth method, he says: "For example, a delinquency test is given to non-delinquent and delinquent groups; the significance of the difference in scores is determined by the critical ratio or bi-serial."³

Discussing the seventh method, he says: "This is an extension of the preceding method. For example, differences may be noted among boys from a relatively delinquent-free area, boys from a delinquency area, boys from a day school for behavior problems, and boys from juvenile correctional institutions."⁴

Cushing and Ruch⁵ say: "The first step in the validation of character test methods would seem to be that of comparing subjects actually adjudged delinquent by the courts with normal subjects of about the same ages, mentality and social status." They pointed out, however, that if a significant difference were found it might be the result of institu-

³ Loc. cit.

⁴ Ibid.

⁵ Cushing, H. M. and G. M. Ruch, "An Investigation of Character Traits in Delinquent Girls," The Journal of Applied Psychology, 11:1, February, 1927.

tional life and not the result of traits characteristic of potential delinquency. In their study of the differences between two such groups on light tests they found that length of commitment had no bearing on the results of the tests.

Reusser⁶ gave a personal attitudes test to several hundred boys in a state training school. He divided the boys into six groups according to length of time in school. He also ran a re-test on eighty boys twelve months later. He found little difference in the means of the groups. His evidence supported the contention that the mere fact of commitment to the institution does not change the attitudes of the training-school boys.

Clark⁷ devised a battery of seven tests, each of which consisted of rating seven crimes in the order of their seriousness. He standardized his tests by obtaining ratings from a group of professional people. He found marked deviations when it was given to delinquent subjects. This was known as the Whittier Scale for Grading Juvenile Offenses.

Mursell⁸ devised a different scoring technique for the Whittier Scale that rated both anti-social and social acts of the individual.

⁶ Reusser, J. L., "Attitudes of Delinquent Boys," The Journal of Juvenile Research, 17:19-34, January, 1933.

⁷ Clark, W. W., Whittier Scale for Grading Juvenile Offenses, (Bulletin No. 11, California Bureau of Juvenile Research, 1922).

⁸ Mursell, G. R., "A Revision of the Whittier Scale for Grading Juvenile Offenses," The Journal of Juvenile Research, 16:246-250, July, 1932.

With his scoring the complete behavior of the individual could be measured in objective terms. By comparing the plus and minus scores it could be determined whether the individual's general tendencies were social or anti-social.

Hawthorne⁹ constructed a group test for the measurement of cruelty. It consisted of thirty-one questions of five items each. Each question had one item considered to be of sadistic import. He assumed that the attitude of the subject toward the key item in relation to the other items would give some indication of the subject's reaction tendencies. Only the key item was scored. He found that the test did distinguish between normal and delinquent pupils of junior and senior high school age.

Hill¹⁰ applied a test meant to measure knowledge and understanding of the social code to several hundred offenders at a state reformatory and to three control groups. The test consisted of fifty brief descriptions of social situations and acts selected by the author to represent a fair sample of various types of behavior commonly considered to have social significance. He found a high degree of general agreement between the measured ethical knowledge of offenders and non-offenders.

⁹ Hawthorne, J. W., "A Group Test for the Measurement of Cruelty-Compassion," The Journal of Social Psychology, 3:189-209, May, 1932.

¹⁰ Hill, G., "The Ethical Knowledge of Delinquent and Non-Delinquent Boys," The Journal of Social Psychology, 6:107-114, February, 1935.

Laslett¹¹ used an association test. He presented words including "steel," "big," "forge," "safe," and "queer" on flash cards and instructed the child to put down the first word that came to mind. One response considered delinquent was the association of "steel" with "theft."

Fanquier¹² also used an associational method. The subjects were instructed to write quickly their first seven associations to each of four stimulus words (hate, fear, love, desire). The general findings of his study suggest basic differences between the attitudes of delinquent and normal boys.

Capwell¹³ found in testing a group of delinquent and non-delinquent girls that the Minnesota Multiphasic Personality Inventory and the Washburne Self-Adjustment Inventory discriminated between the groups in degree of personality adjustment.

Speer¹⁴ gave the Bermenter Personality Inventory to groups of problem and non-problem children. He found no significant difference

¹¹ Laslett, H. R., "Preliminary Notes on a Test of Delinquent Tendencies," The Journal of Delinquency, 9:222-230, November, 1925.

¹² Fanquier, W., "The Measurement of Attitudes of Delinquent and Normal Boys by Use of an Associational Technique," Child Development, 10:231-239, December, 1939.

¹³ Capwell, D., "Personality Patterns of Adolescent Girls--Delinquents and Non-Delinquents," The Journal of Applied Psychology, 28:289-297, August, 1945.

¹⁴ Speer, G., "The Use of the Bermenter Personality Inventory as an Aid in the Prediction of Behavior Problems," The Journal of Juvenile Research, 20:65-69, April, 1936.

between the scores of the problem and non-problem groups on any of the four scales.

Schwesinger¹⁵ gathered a collection of slang phrases and street language and put them into four groupings: (1) definitions, of single words, (2) definitions of phrases, (3) same--opposites, (4) classification of slang knowledge. The test was given to a group of public school boys and a group of boys in a probation school. No appreciable difference was found between the answers of the two groups.

Weber¹⁶ gave the Brogan Test (a list of sixteen bad practices suggested by university students) to over a hundred female delinquents at a reformatory school. The subject is required to put these practices in the order of badness. Weber found the moral insight of the female delinquents similar to that of university women.

Washburne¹⁷ tried out three simple tests. The subjects were given their choice of three things: (1) an automobile now or an automobile and a million dollars a year from now; (2) a piece of candy now or five pieces next week; (3) one cent now or ten cents next week. If one cent was refused, five cents now were offered, and if this amount was

¹⁵ Schwesinger, G. C., "Slang as an Indication of Character," The Journal of Applied Research, 10:245-263, March, 1926.

¹⁶ Weber, C. O., "Moral Judgment in Female Delinquents," The Journal of Applied Psychology, 10:89-91, March, 1926.

¹⁷ Washburne, J. N., "An Experiment in Character Measurement," The Journal of Juvenile Research, 13:1-18, January, 1929.

refused eight cents now were offered. Washburne found a consistent choice of now or a very low score in the combined tests, seems to indicate delinquency in children over twelve years old. It indicates misbehavior in children between eight and twelve. It seems to have no significance with children under eight.

Hill¹⁸ gave two arithmetic tests of forty problems each. The first time the pupil scored his own test. The second time the test was scored by the examiner. He decided that such a cheating test was not a useful means of distinguishing delinquents from non-delinquents.

Murray¹⁹ gave his Play Information Test to a group of high school boys and a group of boys in a reform school. He found that the high school boys got much higher scores than the reform school boys. The test consisted of two hundred short-answer questions on football, baseball, basketball, and track. He suggests that the type of boy committed to the state school was not interested in athletics when he went to public school, or else facilities at the state school were insufficient to provide opportunities for acquiring athletic information.

¹⁸ Hill, G., "Cheating Among Delinquent Boys," The Journal of Juvenile Research, 18:169-174, July, 1934.

¹⁹ Murray, V., "A Comparative Study of Play Information and Athletic Achievement in Delinquent and Non-Delinquent Boys," The Journal of Juvenile Research, 15:111-120, April, 1931.

Poull and Montgomery²⁰ found a tendency for maladjusted children to make lower scores on the Porteus Maze Test than they make on the Stanford-Binet.

Karpeles²¹ in her study strengthened Porteus' claim that scores on the maze test are lower in the cases of delinquency and confirmed the findings made by Poull and Montgomery.

Simpson²² tried a self-rating trait scale on prison inmates and college students. He found a tendency for the inmates to rate themselves higher than college students in the possession of generally desirable personality traits.

Simpson²³ also compared the attitude of prisoners and college students toward the Ten Commandments. The Commandments were printed in random order on separate sheets of paper. The subjects were instructed to number them according to their importance to themselves. He found a marked degree of agreement in the attitudes of college students and prison inmates.

²⁰ Poull, L. and R. Montgomery, "The Porteus Maze Test as a Discriminative Measure in Delinquency," The Journal of Applied Psychology, 13:145-151, April, 1929.

²¹ Karpeles, L., "A Further Investigation of the Porteus Maze Test as a Discriminative Measure in Delinquency," The Journal of Applied Psychology, 16:427-437, August, 1932.

²² Simpson, R., "Self-Ratings of Prisoners and Students," The Journal of Social Psychology, 4:464-477, November, 1933.

²³ Simpson, R., "Attitude Toward the Ten Commandments," The Journal of Social Psychology, 4:223-230, May, 1933.

Lentz²⁴ studied the reactions of delinquents to the Pressey X-O Tests. He found that the scores did not differentiate between delinquents and non-delinquents.

Shakow and Millard²⁵ tried out several performance tests and found that the Healy Picture Completion Test II seemed to offer possibilities for use with adult delinquents. Their results showed a relatively poorer performance of delinquents on this test.

Hautchens²⁶ found differences between delinquent and non-delinquent groups by using a combination of the Luria technique and the Kent-Rosanoff word list.

Some investigators have attempted to differentiate between delinquents and non-delinquents by batteries or combinations of tests. Among the better known are: The Incurability Tests of Cody,²⁷ (not published separately), Tests of Delinquency of Raubenheimer,²⁸ (not published separately), Test to Determine Delinquency Tendencies by Casselbury,²⁹ (not

²⁴ Lentz, T. F., Jr., An Experimental Method for the Discovery and Development of Tests of Character. Teachers' College Contributions to Education, No. 180 (New York: Columbia University, 1925).

²⁵ Shakow, D., and B. Millard, "A Psychometric Study of 150 Adult Delinquents," The Journal of Social Psychology, 6:437-455, November, 1935.

²⁶ Hautchens, H. M., "Mental Conflict in Delinquent and Non-Delinquent Boys," The Journal of Juvenile Research, 19:180-191, October, 1935.

²⁷ Cody, V. M., "The Estimation of Juvenile Incurability," The Journal of Delinquency Monographs, No. 2, 1923.

²⁸ Raubenheimer, A. S., "An Experimental Study of Some Behavior Traits of the Potentially Delinquent Boy," Psychological Monographs, No. 159.

published separately).

Rogers³⁰ constructed an instrument for testing child adjustment for children nine to thirteen that has proved useful in clinical work.

Although not primarily studies of delinquent groups, the researches of the Character Education Inquiry^{31, 32, 33} under the direction of Hartshorne and May should be mentioned. They are the most extensive investigations in the field of character behavior. They consist especially of the comparison of groups in conduct tests of trustworthiness, persistence, inhibition and cooperation as well as in tests of moral knowledge.

Loofbourow and Keys³⁴ collected several of the known tests which purported to measure problem behavior tendencies. They applied these

159, 1923.

²⁹ Casselberry, W. S., "Analysis and Prediction of Delinquency," The Journal of Juvenile Research, 16:1-31, January, 1932.

³⁰ Rogers, C. R., Measuring Personality Adjustment in Children Nine to Thirteen. Contributions to Education, Number 458 (New York: Teachers' College, Columbia University, 1931).

³¹ Hartshorne, H. and M. A. May, Studies in Deceit (New York: The Macmillan Company, 1928).

³² Hartshorne, H., M. A. May, and J. B. Maller, Studies in Service and Self-Control (New York: The Macmillan Company, 1929)

³³ Hartshorne, H., M. A. May, and F. K. Shuttleworth, Studies in the Organization of Character (New York: The Macmillan Company, 1930).

³⁴ Loofbourow, G., and N. Keys, "A Group Test of Problem Behavior Tendencies in Junior High School Boys," The Journal of Educational Psychology, 24:641-653, December, 1933.

group tests to reformatory inmates and several groups of junior high school boys designated as disciplinary problems and junior high school boys not designated as disciplinary problems. They experimented with the material for several years and in 1934 they developed the Loofbourow-Keys Personal Index. It is designed to be given in forty minutes to boys in the seventh, eighth, and ninth grades. Boys who receive a score greater than a critical score of forty on the test are likely to be problem cases. The final battery had a reliability of over .90. Validity is given as about .75. The test showed no correlation with a group intelligence test.

Riggs and Joyal³⁵ gave the Personal Index to 186 boys entering a junior high school. The boys' advisor in the school was asked twice to select the worst and best boys in the school in terms of problem behavior. He made his first selection shortly after the boys entered school and his second selection two years later. He made his selections without seeing the test scores. A correlation of .58 was found between the scores and the initial rating, and of .48 between the scores and the final ratings.

Stogdill³⁶ developed a test-interview in which the child is questioned directly about his behavior. Each item is printed on a separate

³⁵ Riggs, W. C. and A. E. Joyal, "A Validation of the Loofbourow-Keys Personal Index of Problem Behavior in Junior High Schools," The Journal of Educational Psychology, 29:194-201, March, 1938.

³⁶ Stogdill, R. N., "A Test-Interview for Delinquent Children," The Journal of Applied Psychology, 24:325-333, June, 1940.

card. The card is dropped by the subject into either a "Yes" box or a "No" box to indicate his response. After the complete set of 189 items has been sorted, the "Yes" responses are checked on a sheet and the cards put back in order. Thus the child does not feel he is making a permanent record of his behavior. Stogdill found a critical ratio of 6:1 between a group of delinquent children and a group of seventh and eighth grade children matched as to chronological age. He recommends his cards as "A standardized interviewing technique which discriminates well between normal and delinquent boys when they are compared as to total score."

SUMMARY

There seem to have been three main techniques used in attempting to find potential delinquents. One technique has been the diagnosis of the seriousness of delinquent careers. The second technique has been to devise tests or batteries of tests (without paying attention especially to delinquent behavior) that will show a difference between normal and delinquent groups. The third technique is to take well-known tests constructed for some other purpose and see if they will distinguish between normal and delinquent groups.

The two tests that seem to stand up fairly well with present conceptions of validity are the Personal Index of Loofbourow and Keys and the Behavior Cards of Stogdill.

CHAPTER III

PROCEDURES AND STATISTICAL TECHNIQUE

SCOPE OF THE PROBLEM

The Scale was given to 138 public school boys, 169 public school girls, 16 high-morale boys, and 43 high-morale girls in four junior high schools in Portland, Oregon. The Scale was also given to 99 delinquent boys at Lyman School for Boys (a Massachusetts state institution for delinquent boys) and to 81 delinquent girls at Lancaster Industrial School for Girls (a Massachusetts state institution for delinquent girls).

DESCRIPTION OF THE SCALE

Dr. Kvaraceus¹, the author of the Scale, says "The directive and dynamic effects of attitude in provoking behavior is such that the question is raised: Is it not possible to predict certain types of behavior or potentiality for certain behavior by noting the attitude responses of children characterized by desirable and undesirable behavior?

"If significant differences in attitude responses on a test such as the Attitude and Behavior Scale can be noted between groups who behave differently, it may then be possible to apply the same scale to other children and to note the extent to which they reveal attitudes previously

¹ Kvaraceus, W. C., "Directions for Administration of the Attitude and Behavior Scale."

found to be associated significantly with individuals who are known to have certain types of behavior patterns. Knowledge of the existence of these attitudes and predispositions for certain types of undesirable conduct and behavior may enable the parent, the teacher, the clinician, the probation officer or the court better to evaluate delinquency proneness and to take proper remedial or corrective steps to prevent the culmination of certain attitudes in undesirable behavior."

Droba² says, "There is a fairly general agreement among writers that attitudes are truly indicators of behavior. An attitude will in general be followed by a type of activity indicated in the attitude."

Most of the items in the Scale were written around the significant differences (noted by the author) between delinquents and non-delinquents studied in Passaic, New Jersey. The Scale consists of 74 multiple choice questions. Each question has four choices.

DIRECTIONS ON THE SCALE³

This is a questionnaire to discover how you feel about certain things. This is not a test: There are no right or wrong answers. Read each question and the four answers that follow it. Select the answer that best describes how you really feel about the question. Do not skip any questions. Answer every question as you come to it. Be sure to se-

² Droba, D. D., "The Nature of Attitude," The Journal of Social Psychology, 4:459, November, 1933.

³ Kvaraceus, W., op. cit.

lect the answer that best describes how you feel or what you think about the question. Remember there is no right or wrong answer. Be sure to choose the answer that best tells how you feel about the question.

One disadvantage of personality tests is the ease of falsifying the answers. Children taking the Scale were told that the Scale was a questionnaire to discover how they felt about certain things and not a test. They were also told that there was no right or wrong answer to the question.

THE SCORING TECHNIQUE

A preliminary item analysis of the scale was run on the scale results of 99 delinquent boys compared with 16 high-morale boys and 43 high-morale girls. The discriminating items between the two groups were selected and weighted according to the magnitude of their critical ratios. A weight of 3 or -3 was given when the critical ratio exceeded 3.0902. When the critical ratio was between 2.5758 and 3.0902 the item was given a weight of 2 or -2. When the critical ratio was between 1.9600 and 2.5758 the item was given a weight of 1 or -1. Positive weights indicate delinquency proneness. The total score of a subject on the scale is the total of his positive and negative scores.

CRITERION

The purpose of this scale is to locate delinquency proneness. If significant differences can be found between groups known to be de-

linquent and unselected groups of public school children, the test can be considered valid.

If significant differences can be found between high-morale groups and delinquent groups and between high-morale groups and public school groups this would add further substantiation to the validation of the test.

If a critical score can be found for boys and another one for girls, that will cover a large percentage of the delinquent group and only a small percentage of the public school and high-morale groups, this will help prove the Scale is valid.

If low correlation is found between intelligence scores and the scale Scores this will indicate that the Scale is not measuring intelligence.

TREATMENT OF DATA

1. The mean Scale score and standard deviation will be found for each of the groups tested.
2. The mean chronological age and standard deviation will be found for each group tested.
3. The mean intelligence quotient and standard deviation will be found for each group tested.
4. The critical ratio will be found for the differences between all

groups to see if the differences are significant.

5. The correlations between intelligence test scores and Scale scores will be found for each group.

6. The percentages of each group reaching the different scores on the scale will be found.

7. A critical score will be selected for the boys.

8. A critical score will be selected for the girls.

9. The groups will be divided into different I.Q. groups (over 110, 90-110, under 90) and the mean scale scores found for each group.

CRITICAL RATIO

If differences are found between the mean scale scores, the following question must be answered, "Are the results significant, or are they due to fluctuations in random sampling?" The answer is found in the law of probability. The probability of a variant, chosen at random, being more than three standard deviations from the mean is very small. If the difference between the means is more than three standard deviations of the distribution, then the probability is small and the results cannot be due to random sampling. When the critical ratio is three or greater the chances are nearly 100 in 100 that the true difference is greater than zero.

As the scores of the distributions used in this study are not

correlated, the following formula will be used to find the critical ratios of the differences between the mean scale scores.

$$\sigma_D = \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}$$

Mills⁴ considers a value of 2.576 or more a significant difference.

CORRELATION

The Pearson Product Movement Formula will be used to find the correlations between the Scale scores and intelligence test scores. The two sets of scores will be checked on a scatter diagram to make sure they are linear.

RELIABILITY

The reliability of the Scale will be found in another current study. It was not possible to find the reliability with the present data. Because of the weighted scores and the small number of items the split-half method for finding reliability would not work. The only way to find the reliability of the Scale would be by the re-test method and it was not possible to re-test the groups in this study.

⁴Mills, F. C., Statistical Methods Applied to Economics and Business, revised, (New York: Henry Holt and Company, 1938) p. 471.

CHAPTER IV

ANALYSIS OF DATA

The purposes of this study were: 1) to determine the validity of the Attitude and Behavior Scale (designed to predict proneness toward delinquency), 2) to determine the relationship between the Scale scores and intelligence test scores.

The Scale was given to 138 unselected public school boys, 169 unselected public school girls, 99 delinquent boys, 81 delinquent girls, 16 high-morale boys and 43 high-morale girls. Details and results are summarized in Tables I to IX, below.

TABLE I

The Mean Chronological Ages and Intelligence Quotients
of the Groups Tested.

No.	Population	Mean		Mean	
		C.A.	S.D.	I.Q.	S.D.
16	High-morale boys	15Y 3M	9.87	111.18	9.63
43	High-morale girls	14Y 10M	6.30	110.69	10.23
138	Public school boys	14Y 7M	17.78	109.35	11.85
169	Public school girls	14Y 2M	18.90	108.00	11.85
99	Delinquent boys	14Y 8M	14.42	90.20	14.80
81	Delinquent girls	14Y 5M	13.86	93.20	16.15

The mean chronological ages do not differ greatly among the groups. The lowest mean age is 14 years, 2 months for 169 public school children and the highest mean age is 15 years, 3 months for 16 high-morale boys.

The intelligence quotients for the high morale groups are just above the upper limit (110) of what is usually considered the average group of intelligence (90-110).

The intelligence quotients of 109.35 for 138 public school boys and 108 for 169 public school girls are in the upper part of the average distribution group of intelligence in a normal population (90-110).

The intelligence quotients of the delinquent groups fall within the low average I.Q. group.

Owen¹ in a summary of 43 separate studies totaling several thousand and delinquent children found a median I.Q. of 82.46.

TABLE II

The Mean Scale Scores of the Boys and Girls Tested.

No.	Population	Mean	S.D.	Range
43	High-morale girls	-61.95	14.30	-23 to -87
16	High-morale boys	-44.13	11.61	-28 to -71
169	Public school girls	-45.43	19.67	28 to -85
138	Public school boys	-32.51	19.53	37 to -75
81	Delinquent girls	-8.90	22.65	39 to -54
99	Delinquent boys	7.60	17.55	47 to -32

The girls in all three groups did better than the boys. This

¹ Owen, M. B., "The Intelligence of the Institutionalized Juvenile Delinquent," The Journal of Juvenile Research, 21:199, October, 1937.

might be explained in two ways: (1) The Scale was set up on item analysis of boys' Scale results, (2) Most studies have found that there are many more delinquent boys than delinquent girls. Williams², in a study of several hundred pre-delinquent children found four times as many boys as girls.

There is a great difference between the delinquent group scores and the public school and high-morale groups.

There is also a difference between the public school group and the high-morale group.

The higher the positive score the higher the indications that the subject is prone toward delinquency. The higher the negative score the higher the indications that the subject is not prone toward delinquency.

TABLE III

Critical Ratios for the Differences
in Scale Scores among the Boys' Groups

No.	Population	Mean	S.E.M	DIFFM	S.E.D	C.R.
138	Public school boys	-32.51	1.6	40.11	2.33	17.21
99	Delinquent boys	7.60	1.7			
16	High-morale boys	-44.13	2.9	51.73	3.36	15.39
99	Delinquent boys	7.60	1.7			
16	High-morale boys	-44.13	2.9	11.52	3.31	3.48
138	Public school boys	-32.51	1.6			

² Williams, H. D., "A Survey of Pre-delinquent Children in Ten Middle Western Cities," The Journal of Juvenile Research, 17:163, July-October, 1933.

A critical ratio of 17.21 was found between the difference in Scale scores of the public school boys and the delinquent boys. A critical ratio of 3.48 was found between the public school boys and the high-morale boys. A critical ratio of 15.39 was found between the delinquent boys and the high-morale boys. All three critical ratios are significant and much greater than 2.576 accepted by Mills as significant.

TABLE IV

Critical Ratios for the Differences
in Scale Scores among the Girls' Groups

No.	Population	Mean	S.E.M	DIFFM	S.E.D	C.R.
169	Public school girls	-45.43	1.51	36.53	2.93	12.46
81	Delinquent girls	-8.90	2.51			
43	High-morale girls	-61.95	2.18	53.05	3.32	15.97
81	Delinquent girls	-8.90	2.51			
43	High-morale girls	-61.95	2.18	16.52	2.65	6.23
169	Public school girls	-45.43	1.51			

A critical ratio of 12.46 was found between the difference in Scale scores of the public school girls and the delinquent girls. A critical ratio of 15.97 was found between the high-morale girls and the delinquent girls. A critical ratio of 6.23 was found between the high-morale girls and the public school girls. All three critical ratios are significant.

TABLE V
Correlations Between Intelligence Scores
and the Scale Scores

No.	Population	Correlation
16	High-morale boys	-.377
43	High-morale girls	-.264
138	Public school boys	-.420
169	Public school girls	-.356
99	Delinquent boys	-.225
81	Delinquent girls	-.327

All the correlations are negative. The highest correlation is a -.420 between the public school boys' Scale scores and the public school boys' intelligence scores. Since the test measures delinquency proneness, a negative correlation means that delinquency proneness is inversely related to intelligence. The high intelligence scores tend to show less delinquency proneness than do the low intelligence scores. The correlations are not high enough to indicate that the Scale is measuring intelligence and not delinquency proneness. The correlations do show a trend for the lower intelligence quotients to be more delinquency prone.

In a study of the intelligence of 600 juvenile delinquents, MacClure³ found the following distribution:

110-119	.99 per cent
90-109	20.76 per cent
80-89	26.67 per cent
70-79	27.41 per cent
below 70	24.92 per cent

³ MacClure, W. E., "The Intelligence of 600 Juvenile Delinquents," The Journal of Juvenile Research, 17:38, January, 1933.

This study tends to bear out the trend shown by the above correlations for lower intelligence scores to show boys and girls with more delinquency proneness than the boys and girls with the higher intelligence scores.

TABLE VI

Mean Scale Scores of All the Subjects Tested
Divided into Three I.Q. Groups

No.	Population	I.Q. Mean Scale
		<u>Above 110</u>
11	Delinquent girls	-11.80
76	Public school girls	-50.70
10	Delinquent boys	.50
75	Public school boys	-39.45
		<u>90 - 110</u>
43	Delinquent girls	-16.15
82	Public school girls	-43.95
42	Delinquent boys	6.15
55	Public school boys	-25.75
		<u>Below 90</u>
27	Delinquent girls	.50
11	Public school girls	-22.00
47	Delinquent boys	10.00
8	Public school boys	-16.38

This table shows evidence of the trend found in Table V for the lower intelligence quotients to get Scale scores showing more delinquency proneness than the higher intelligence quotients. Each intelligence group shows a large difference between the delinquent Scale scores and the pub-

lic school Scale scores.

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TABLE VII

Frequency Distribution Table for Scale Scores

Scale Scores	Delin- quent Girls	Public School Girls	Delin- quent Boys	Public School Boys	High Morale Girls	High- Morale Boys
+42 +47	0		3	0		
+36 +41	1		0	1		
+30 +35	0		7	0		
+24 +29	1	1	9	0		
+18 +23	7	0	10	3		
+12 +17	3	0	13	0		
+ 6 +11	9	1	16	1		
0 + 5	8	1	11	1		
- 1 - 6	9	1	5	4		
- 7 -12	7	5	11	4		
-13 -18	7	10	6	12		
-19 -24	10	6	5	19	1	
-25 -30	9	10	1	13	1	2
-31 -36	4	13	2	19	0	1
-37 -42	2	20		16	3	5
-43 -48	3	22		14	3	4
-49 -54	1	20		11	1	0
-55 -60		18		12	10	3
-61 -66		20		5	4	0
-67 -72		7		2	9	1
-73 -78		8		1	8	
-79 -84		5			2	
-85 -90		1			1	
	—	—	—	—	—	—
	81	169	99	138	43	16

TABLE VII

Frequency Distribution Table for Scale Scores

Scale Scores	Public School Girls	Public School Boys	Public School Girls	Public School Boys	High School Girls	High School Boys
45	1	1	1	1	1	1
46	1	1	1	1	1	1
47	1	1	1	1	1	1
48	1	1	1	1	1	1
49	1	1	1	1	1	1
50	1	1	1	1	1	1
51	1	1	1	1	1	1
52	1	1	1	1	1	1
53	1	1	1	1	1	1
54	1	1	1	1	1	1
55	1	1	1	1	1	1
56	1	1	1	1	1	1
57	1	1	1	1	1	1
58	1	1	1	1	1	1
59	1	1	1	1	1	1
60	1	1	1	1	1	1
61	1	1	1	1	1	1
62	1	1	1	1	1	1
63	1	1	1	1	1	1
64	1	1	1	1	1	1
65	1	1	1	1	1	1
66	1	1	1	1	1	1
67	1	1	1	1	1	1
68	1	1	1	1	1	1
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1
72	1	1	1	1	1	1
73	1	1	1	1	1	1
74	1	1	1	1	1	1
75	1	1	1	1	1	1
76	1	1	1	1	1	1
77	1	1	1	1	1	1
78	1	1	1	1	1	1
79	1	1	1	1	1	1
80	1	1	1	1	1	1
81	1	1	1	1	1	1
82	1	1	1	1	1	1
83	1	1	1	1	1	1
84	1	1	1	1	1	1
85	1	1	1	1	1	1
86	1	1	1	1	1	1
87	1	1	1	1	1	1
88	1	1	1	1	1	1
89	1	1	1	1	1	1
90	1	1	1	1	1	1
91	1	1	1	1	1	1
92	1	1	1	1	1	1
93	1	1	1	1	1	1
94	1	1	1	1	1	1
95	1	1	1	1	1	1
96	1	1	1	1	1	1
97	1	1	1	1	1	1
98	1	1	1	1	1	1
99	1	1	1	1	1	1
100	1	1	1	1	1	1

Table VIII shows the percentage of boys reaching each scale score on the frequency table. A critical score of -12 would take in 85.8 per cent of the delinquent boys and only 10.1 per cent of the public school boys.

Table IX (page 38) shows the percentage of girls reaching each scale score on the frequency table. A critical score of -18 would take in 64.1 per cent of the delinquent girls and 11.2 per cent of the public-school girls. It would not take in any of the high-morale group.

Table VIII shows the percentage of boys reaching each grade score on the frequency table. A critical score of 15 would place in 92.8 per cent of the delinquent boys and only 10.1 per cent of the population of the school boys.

Table IX (page 38) shows the percentage of girls reaching each grade score on the frequency table. A critical score of 15 would place in 64.1 per cent of the delinquent girls and 11.2 per cent of the population of the school girls. It would not take in any of the high-grade group.

TABLE VIII

Cumulative Percentage Table for Boys' Scale Scores

Scale Scores	Delin- quent Boys	Percentage of: Public School Boys	High Morale Boys
+ 42 + 47	03.0	0	0
+ 36 + 41	03.0	.7	0
+ 30 + 35	10.1	.7	0
+ 24 + 29	19.0	.7	0
+ 18 + 23	29.2	02.8	0
+ 12 + 17	42.4	02.8	0
+ 6 + 11	58.5	03.6	0
0 + 5	69.6	04.3	0
- 1 - 6	74.7	07.2	0
- 7 - 12	Critical Score 85.8	10.1	0
- 13 - 18	91.9	18.8	0
- 19 - 24	96.9	32.6	0
- 25 - 30	97.9	42.0	12.5
- 31 - 36	100.0	55.7	18.7
- 37 - 42		67.3	50.0
- 43 - 48		77.5	75.0
- 49 - 54		85.5	93.7
- 55 - 60		93.1	93.7
- 61 - 66		97.8	100.0
- 67 - 72		99.2	
- 73 - 78		100.0	
- 79 - 84			
- 85 - 90			

TABLE VIII

Cumulative Percentage Table for Boys' Scale Scores

Scale Scores	Bellevue Boys	Public School Boys	Percentage of: High Moral Boys
+ 45	07.0	0	0
+ 40	09.0	7	0
+ 35	10.1	7	0
+ 30	12.0	7	0
+ 25	22.8	02.8	0
+ 20	42.4	02.8	0
+ 15	58.5	09.6	0
+ 10	69.6	04.3	0
+ 5	74.7	07.8	0
- 1			
- 5			
- 10			
- 15			
- 20			
- 25			
- 30			
- 35			
- 40			
- 45			
- 50			
- 55			
- 60			
- 65			
- 70			
- 75			
- 80			
- 85			
- 90			
- 95			
- 100			

TABLE IX

Cumulative Percentage Table for Girls' Scale Scores

Scale Scores		Delin- quent Girls	Percentage of:	
			Public School Girls	High Morale Girls
+42	+47	0	0	0
+36	+41	01.2	0	0
+30	+35	01.2	0	0
+24	+29	02.4	.5	0
+18	+23	11.1	.5	0
+12	+17	14.8	.5	0
+ 6	+11	25.9	01.1	0
0	+ 5	35.8	01.7	0
- 1	- 6	46.9	02.3	0
- 7	-12	55.5	05.3	0
-13	-18	Critical Score	64.1	11.2
-19	-24	76.5	14.7	02.3
-25	-30	87.6	20.7	04.6
-31	-36	92.5	28.4	04.6
-37	-42	95.0	40.2	11.6
-43	-48	98.6	53.2	18.6
-49	-54	100.0	65.0	20.9
-55	-60		75.7	44.1
-61	-66		87.0	53.4
-67	-72		91.7	74.4
-73	-78		96.4	93.0
-79	-84		99.4	97.6
-85	-90		100.0	100.0

CHAPTER V

SUMMARY AND CONCLUSIONS

SUMMARY

1. The purposes of this study were (1) to determine the validity of the Attitude and Behavior Scale (designed to predict proneness toward delinquency) (2) to determine the relationship between the Scale scores and intelligence test scores.
2. The Scale was given to 138 unselected public school boys, 169 unselected public school girls, 99 delinquent boys, 81 delinquent girls, 16 high-morale boys, and 43 high-morale girls.
3. A critical ratio of 17.21 was found between the mean Scale score of the unselected public school boys and the mean Scale score of the delinquent boys.
4. A critical ratio of 12.46 was found between the mean Scale score of the unselected public school girls and the mean Scale score of the delinquent girls.
5. All the correlations between I.Q. scores and Scale scores were negative. The highest correlation found was $-.420$.
6. The correlations did indicate a slight trend for the high I.Q. to be less prone toward delinquency and the low I.Q. to be more prone toward delinquency.

CHAPTER V

SUMMARY AND CONCLUSIONS

SUMMARY

1. The purposes of this study were (a) to determine the validity of the Attitude and Behavior Scale (designed to predict program toward delinquency) (b) to determine the relationship between the Scale scores and intelligence test scores.
2. The Scale was given to 133 unselected public school boys, 100 unselected public school girls, 99 delinquents boys, 51 delinquents girls, 15 high-average boys, and 15 high-average girls.
3. A critical ratio of 17.81 was found between the mean Scale score of the unselected public school boys and the mean Scale score of the delinquent boys.
4. A critical ratio of 12.46 was found between the mean Scale score of the unselected public school girls and the mean Scale score of the delinquent girls.
5. All the correlations between I.Q. scores and Scale scores were negative. The highest correlation found was -.430.
6. The correlations did indicate a slight trend for the high I.Q. to be less prone toward delinquency and the low I.Q. to be more prone toward delinquency.

7. A critical score for the boys was found that would take in 85.8% of the delinquent boys and 10.1% of the public school boys and none of the high-morale boys.

8. A critical score for the girls was found that would take in 64.1% of the delinquent girls and 11.2% of the public school girls and none of the high-morale girls.

CONCLUSIONS

1. On the basis of evidence found in this study the test measures to a high degree what it purports to measure (proneeness toward delinquency) and is a valid test.

A. Very significant critical ratios were found between the two main criterion groups (a group known to be delinquent, and an unselected public school group).

B. Significant critical ratios were also found between another criterion group (the high-morale group) and the unselected public school group.

C. A critical score of -12 will take in 85.8 per cent of the delinquent boys, 10.1 per cent of the public school boys and none of the high-morale boys.

D. A critical score of -18 will take in 64.1 per cent of the delinquent girls, 11.2 per cent of the public school girls and none of the high-morale group.

E. The correlations between the intelligence quotients and the Scale scores were not high enough to indicate that the Scale

7. A critical score for the boys was found that would take in 25.7% of the delinquent boys and 10.1% of the public school boys and none of the high-achieving boys.

8. A critical score for the girls was found that would take in 14.1% of the delinquent girls and 11.2% of the public school girls and none of the high-achieving girls.

CONCLUSIONS

1. On the basis of evidence found in this study the test measures to a high degree what it purports to measure (promotes sound delinquency) and is a valid test.

2. Very significant critical scores were found between the two main delinquent groups (a group known to be delinquent, and an unselected public school group).

3. Significant critical scores were also found between another delinquent group (the high-achieving group) and the unselected public school group.

4. A critical score of -12 will take in 25.7 per cent of the delinquent boys, 10.1 per cent of the public school boys and none of the high-achieving boys.

5. A critical score of -15 will take in 14.1 per cent of the delinquent girls, 11.2 per cent of the public school girls and none of the high-achieving girls.

6. The correlations between the intelligence quotients and the test scores were not high enough to indicate that the test

was measuring intelligence.

- F. The correlations showed that there was (1) a slight tendency for high intelligence scores to go with Scale scores showing little proneness toward delinquency (2) a slight tendency for low intelligence scores to go with Scale scores showing proneness toward delinquency.

Many studies have shown that the majority of delinquent children have intelligence quotients clustering around low average intelligence.

2. The Scale seems to give better results with the boys than it does with the girls. This is probably due to the fact that the scoring system was set up on the Scale results of boys.

SUGGESTIONS FOR FURTHER RESEARCH

1. The Scale might be given to an unselected group of public school children and a follow-up study made two or three years later. The follow-up study would be to see if the children who were picked out by the Scale as delinquency prone had become delinquents.
2. A correlation could be run between the Stogdill Behavior Card Series and the Scale Score. The Behavior cards make up an individual type of test for delinquency proneness.
3. The Scale could be given to a delinquent group, a pre-delinquent group, a high-morale group and an unselected group to see if the Scale would successfully differentiate between all the groups.

and measuring intelligence.

7. The correlation shows that there was (1) a slight tendency for the high intelligence scores to go with the scores showing little proneness toward delinquency (2) a slight tendency for low intelligence scores to go with the scores showing proneness toward delinquency.

Many studies have shown that the majority of delinquent children have intelligence quotients clustering around the average intelligence.

8. The Scale seems to give better results with the boys than it does with the girls. This is probably due to the fact that the majority of boys are set up on the Scale results of boys.

SUGGESTIONS FOR FURTHER RESEARCH

1. The Scale might be given to an unselected group of public school children and a follow-up study made two or three years later. The follow-up study would be to see if the children who were picked out by the Scale as delinquency prone had become delinquents.

2. A correlation could be run between the Elliott-Bonny and Scale and the Scale score. The Elliott-Bonny scale is an individual type of test for delinquency proneness.

3. The Scale could be given to a delinquent group, a pre-delinquent group, a high-average group and an unselected group to see if the Scale was successfully differentiated between all the groups.

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APPENDIX

THE ATTITUDE AND BEHAVIOR SCALE

(EXPERIMENTAL EDITION)

ATTITUDE AND BEHAVIOR SCALE

(Experimental Edition)

William C. Kvaraceus
Boston University

NAME _____ BOY _____ AGE _____ YRS.
 Last First GIRL _____
SCHOOL _____ GRADE _____ MA _____
GROUP _____ DATE _____ IQ _____
TEST _____

DIRECTIONS

This a questionnaire to discover how you feel about certain things. This is not a test. There are no right or wrong answers. Read each question and the four answers that follow it. Select the answer that best describes how you really feel about the question. Do not skip any questions. Answer every question as you come to it. Be sure to select the answer that best describes how you feel or what you think about the question. Remember there is no right or wrong answer. Be sure to choose the answer that best tells how you feel about the question.

Here is a sample question to show you how you are to mark the answers.

1. The color I like best is

A. red B. pink C. blue D. purple 1. (C)

In the parenthesis, at the right side of the page, write the letter A, B, C, or D which tells which color you like best. Be sure to write only the letter in the parenthesis.

Mark all questions in the same way. Be sure to answer each question as you come to it. You will be given enough time to answer all the questions. Turn the page and begin.

1. The drink I like best is
A. soda pop B. milk C. water D. coffee 1. (A) 2
2. Of the following subjects, which do you like to study best?
A. English C. Art or Drawing
B. Science D. Manual Training or Home Economics 2. (D)
3. Those who get the best jobs are usually the ones
A. who know the right person C. who are the luckiest
B. who are the best trained D. who work the hardest 3. (B)
4. Going to high school
A. is a waste of time
B. is all right for some people but not for me
C. is all right if you can take the course you want
D. is necessary for success 4. (D) -3
5. If I were called a dirty name, I would
A. fight the person C. say and do nothing
B. tell him where to get off D. laugh it off 5. (B)
6. I like best to watch
A. baseball games C. horse races
B. prize fights D. basketball games 6. (A)
7. When you do your school work
A. you always get your reward
B. you sometimes get your reward
C. you seldom get your reward
D. you never get your just reward 7. (C)
8. Parents usually understand their children
A. very well B. quite well C. not very well D. not at all 8. (B) -2
9. If you want to be popular you have to do what the crowd does
A. all the time C. some of the time
B. most of the time D. seldom or never 9. (B)
10. I believe that failure is usually due to
A. bad habits C. lack of ability
B. bad companions D. lack of hard work 10. (C)
11. The pupils who have the best attendance records are almost always
A. honor students B. good students C. poor students D. sissies 11. (B) -3
12. During the summer I would like best to stay
A. around the house
B. at a summer camp away from home
C. at a YMCA (YWCA) day camp
D. at the playground near home 12. (B)
13. I would never like to be a
A. teacher B. minister C. doctor D. crooner 13. (A)
14. You have lots more fun if you live in a family with
A. no brothers or sisters
B. only one brother or sister
C. two brothers or sisters
D. more than four brothers or sisters 14. (D) 1
15. Most boys stay in school because
A. the law makes them C. they want to go to college
B. they have to learn to make a living D. they like school 15. (A) 2

16. Most teachers are 16. (C)
A. very fair B. fair most of the time C. seldom fair D. never fair
17. Smoking is a habit that hurts you 17. (B) 3
A. not at all B. a little C. more than a little D. a great deal
18. The secret of success is 18. (C) -
A. just luck B. hard work C. ability D. money
19. I would like most to be a famous 19. (C)
A. movie actor (actress) B. athlete C. scientist D. writer
20. Most people who get in trouble do not think that 20. (A)
A. they will be caught C. they are really doing wrong
B. they will be punished D. they are hurting others
21. I like best to drink 21. (C)
A. gingerale B. coke C. root beer D. milk shake
22. If I am asked to do something which I think is not reasonable, 22. (C)
I will
A. just refuse to do it
B. argue first and then do just enough to get by
C. do what I'm told and then argue later
D. do what I'm told and say nothing
23. The work that you get in school is usually 23. (B) -
A. very hard B. hard C. pretty easy D. very easy
24. You have the most fun when you play 24. (C)
A. in your own house C. on your street
B. in your own yard D. on the playground near your house
25. Being successful usually means 25. (D) -
A. having a big fortune
B. having many friends
C. having your name in the paper
D. having the respect of many people
26. The best teachers are the ones who are 26. (C) -
A. very easy B. easy C. hard D. very hard
27. Most policemen try to 27. (B)
A. help you B. scare you C. boss you D. get something on you
28. I would like to attend the movies 28. (D)
A. once a week C. three or four times a week
B. twice a week D. every day
29. It is true that cheating in school is usually done by 29. (B)
A. only a few bad pupils C. most of the pupils
B. some of the pupils D. all the pupils
30. You usually have the best time when you do things 30. (D)
A. all by yourself C. with two or three friends
B. with one friend D. with a big gang
31. In school I have found that the teachers know what they are 31. (B) -
talking about
A. always C. some of the time
B. most of the time D. seldom or never

32. I have found that older people understand younger people 32. (C)
A. very well B. rather well C. a little D. not at all
33. Of the following subjects, which do you dislike the most? 33. (B)
A. history or social studies C. English
B. mathematics D. shop classes
34. A boy or girl should be allowed to be his own boss when he is 34. (B) 3
A. 14 years old C. 18 years old
B. 16 years old D. 21 years old
35. People who live in fine houses usually are 35. (B)
A. the best people in town
B. smarter and more educated than most people
C. just lucky
D. crooked in business
36. In my family I would like to be 36. (D)
A. the oldest one C. the only child
B. the youngest one D. one of a large family
37. In schools the good marks are usually given to those 37. (B)
A. who do the best work
B. who work the hardest
C. who only make believe they are working
D. who are teachers' pets
38. When I leave school or graduate, I shall 38. (B) 3
A. take any job that comes along
B. find a good job
C. take it easy for a while
D. go to another school or college
39. Happiness is impossible without 39. (A)
A. love B. friends C. a home D. money
40. Whenever I get into serious trouble, other people are to blame 40. (C) -1
A. always C. sometimes
B. almost always D. seldom or never
41. The color I like best is 41. (D) -3
A. red B. black C. yellow D. blue
42. For the most serious trouble I have ever been in 42. (B)
A. others were to blame more than I was
B. others were as much to blame as I was
C. I was partly to blame
D. I was wholly to blame
43. I would like to stay in bed late in the morning 43. (A)
A. every day B. Saturdays and Sundays C. Sundays D. never
44. The sport I like best is 44. (A)
A. fishing or hunting C. football or baseball
B. over-night hiking D. wrestling
45. The vegetable I like best is 45. (C) 3
A. squash B. potato C. spinach D. carrot
46. In the schools teachers can usually be depended upon to do 46. (B)
A. nothing to help C. much to help me
B. a little to help me D. all they can to help me

47. In school my friends
A. always get me in trouble
B. almost always get me in trouble
C. sometimes get me in trouble
D. never get me in trouble 47. (C) 2
48. Of the teachers I know, I like to study with
A. all of them C. some of them
B. most of them D. one of them 48. (B) 5
49. During the past month I have worried about my family
A. all the time C. some of the time
B. most of the time D. not at all 49. (C) -3
50. I think about what I'll do when I get out of school
A. all the time C. some of the time
B. most of the time D. not at all 50. (A) 3
51. Going to school causes one to be worried and upset
A. all the time C. some of the time
B. most of the time D. never 51. (C) -2
52. I have usually been
A. very lucky C. unlucky most of the time
B. lucky most of the time D. unlucky all the time 52. (B) -2
53. Taking part in school clubs is
A. very important C. not very important
B. quite important D. very unimportant 53. (B) 1
54. The most popular boys are the ones
A. who almost always get into mischief
B. who sometimes get into mischief
C. who seldom get into mischief
D. who almost never get into mischief 54. (C) -3
55. When not in school, you can have the most fun
A. in the mornings C. in the evenings
B. in the afternoons D. late at night 55. (C) -3
56. The pupils who skip school are usually the ones
A. who get the best marks C. who get fair marks
B. who get good marks D. who get the poorest marks 56. (D) -1
57. Going to college is
A. necessary for success
B. all right if you can afford it
C. all right if you have the ability
D. just a waste of time and money 57. (C) 1
58. Most teachers act like other human beings
A. always C. some of the time
B. most of the time D. seldom or never 58. (B) -2
59. I look forward to the time when I shall leave home
A. not at all B. some times C. often D. very often 59. (C) 2
60. Going to school right now is doing me
A. a great deal of good C. doing me more harm than good
B. some good D. doing me a great deal of harm 60. (B) 1

61. During the past month I have been worrying about my health 61. (D) -2
 A. all the time C. some of the time
 B. most of the time D. none of the time
62. Teachers and principals usually treat pupils 62. (C) 3
 A. like slaves or work animals C. like little children
 B. like someone beneath them D. like their equals
63. It is usually true that the police 63. (B)
 A. are very fair C. play favorite to the rich
 B. make some mistakes D. are unfair
64. Failing marks on your report card usually mean 64. (A)
 A. you didn't do your work C. your teacher doesn't like you
 B. you are dumb D. you have been absent a lot
65. The best season of the year is 65. (C)
 A. Christmas time C. summer time
 B. Easter time D. Thanksgiving time
66. The dessert I like best is 66. (D)
 A. jello B. bread pudding C. custard D. pie
67. On my report card I usually get 67. (C)
 A. all honor marks C. fair marks
 B. mostly good marks D. some failure marks
68. The game I like best is 68. (B) -3
 A. checkers B. bingo C. marbles D. authors
69. School rules and regulations have good reasons behind them 69. (B) -2
 A. always C. some of the time
 B. almost always D. seldom or never
70. When I am with someone else and we want something to drink 70. (A) -3
 I like to
 A. buy my own drink
 B. match to see who will pay
 C. fix it so the other person usually pays
 D. pay for all the drinks
71. People who wear fine clothes usually are 71. (A)
 A. just lucky C. better educated than others
 B. smarter than other people D. the best people in town
72. If I had the money I would like best to go to a 72. (A)
 A. dance B. movie C. concert D. bowling alley
73. It is the most fun to have 73. (A) 3
 A. one girl (boy) friend
 B. a few girl (boy) friends
 C. lots of girl (boy) friends
 D. no girl (boy) friends
74. I have learned that 74. (C)
 A. most people can be trusted
 B. some people can be trusted
 C. a few people can be trusted
 D. no one can be trusted

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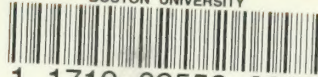
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